

# Visions: Reflections on the Past, Predictions of the Future

To mark NEBHE's 50th anniversary year, CONNECTION invited a small group of visionary commentators to submit short "statements" on the future of New England's economic and civic development, tomorrow's technologies and the changing shape of higher education ...

## In Search of New NEBHEs

NEAL PEIRCE AND CURTIS JOHNSON

NEBHE at 50—survivor of several economic ups and downs and the comings and goings of many a political regime—stands as the region's best evidence that connecting New England assets pays off.

The next 50 years will be tougher. There is no precedent for what New England faces if it hopes to add new chapters to its success story. The region has to flat-out commit to getting every willing young person prepared with an appropriate college education. This will require not only money, but also transformative institutional changes.

What New England also needs—and soon—are new "NEBHEs" to address different problems. On the biggest problems, the region's famous fondness for intense localism will fast prove to be an unaffordable sentimentality.

- Somewhere in western Massachusetts an entrepreneur operates a small biodiesel plant, processing local crops into fuel for nearby customers. At the University of New Hampshire, physics professors refine the technology for biofuels. In Storrs, Conn., economists publish a study showing how a push for renewable fuels could improve the New England economy. Where's the energy-related

"NEBHE" to bring these inventive New Englanders together, to play the convener role, to forge collaborations that reduce the region's energy vulnerability?

- Maine figured out how to give I-95-weary tourists a rail alternative to get to its seductive coastal hideaways, but finds resources hard to come by. Boston, pockets picked bare by the Big Dig, debates whether to build a rail connection between North and South stations or build the circumferential ring through the suburbs. Connecticut spends millions on a freeway interchange to a road that's not going to be built, while Bradley airport lacks vital rail connections. Where is the "NEBHE" to make sense of this hash, to ask and answer the questions about New England's obvious infrastructure needs for this century?
- If broadband at ever increasing speeds and convenience is the opportunity ticket to breathe new life into the remotest reaches of northern New England, where's the leadership structure to gather the cash and clout this proposition requires?
- Maine suggests it can fill the health care coverage gap with its Dirigo program. All six governors sound the alarm over rising publicly paid health costs. But there's no arrangement for blending the region's wisdom and resources, devising solutions on a true regional scale.

*A Half Century of New England Higher Education and Economic Development, continued*



U.S. News & World Report publishes its first annual "America's Best Colleges and Universities."

NEBHE and Caucus of New England State Legislatures earn support from the U.S. Department of Education to begin a series of legislative briefings aimed at providing New England lawmakers with information on higher education and the economy of their states.

Congress authorizes challenge grants aimed at giving colleges an incentive to seek alternative sources of funding.

Rhode Island state Sen. Robert J. McKenna assumes NEBHE chairmanship.

**1984** NEBHE publishes *Renewing Excellence*, revealing, among other things, that New England legislators see higher education playing an important role in retraining workers for high-demand occupations.

Rhode Island voters reject Greenhouse Compact, a comprehensive economic development plan developed by Ira Magaziner and others to encourage business expansion, research and job growth in Rhode Island.

Carl D. Perkins Vocational Education Act continues federal support for vocational education.

With support from the Massachusetts Centers of Excellence Corp., Worcester, Mass., begins a major initiative to join Cambridge as a center of the growing biotechnology industry.

Bates College makes SAT optional for admissions.

**1985** NEBHE creates New England South African Student Scholarship Program, enabling New England colleges to support black South African students at "open universities" in South Africa.

NEBHE and National Institute of Education cosponsor Northeastern Regional Conference on Quality in American Higher Education, bringing together gover-

Some question whether, now that the Red Sox have won the World Series, there's any need for a New England. As outside observers—and admirers of New England—we'd suggest there's more need than ever. But without more "NEBHEs" pushing on multiple fronts, don't expect much progress.

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**Neal Peirce** is chairman of the Citistates Group and a syndicated columnist with the *Washington Post Writers Group*. He has written several books on U.S. states and regions including *The New England States: People, Politics and Power in the Six New England States*. **Curtis Johnson** is president of the Citistates Group and former chair of the Metropolitan Council of Minneapolis-St. Paul.

## Demography Is Still Destiny

PETER FRANCESE

Few things focus the mind as well as increasing awareness of impending doom. If I were working at one of New England's colleges or universities, the focus of my mind would be sharpening on a few rapidly developing trends that bode ill for my institution's future.

*Item One:* Most towns in New England have development policies that discourage parents with school-age children from moving there because voters, most of whom now have no kids at home, don't want to raise their property taxes to pay for educating someone else's children.

*Item Two:* Many towns in New England are actively encouraging older people to stay here or move here by heavily favoring, and sometimes mandating, housing that is legally restricted to people ages 55 or older. The U.S. Fair Housing Act of 1968 forbids virtually any type of discrimination in housing, but not this; it's OK to exclude families with kids.

*Item Three:* Outmigration of young adults from New England is high and likely to grow. Most of the college-bound high school seniors here seem to prefer to enroll somewhere other than in New England. People under age 18 can vote only with their feet, so they're sending us voters a pretty clear message: "You don't really want us here anyway, so we'll just go to college someplace else, and don't be surprised if we stay there after graduation."

New England has become, demographically speaking, the oldest region in the country. All six New England states rank among the 12 oldest in the nation. Maine just edged out West Virginia to have the distinction of the oldest population on average in the United States.

This region's population is aging so fast that one third of New England's counties have had more deaths than births since 2000. Aging also means that because such a high percentage of women in New England are out of the childbearing age range, the number of children will decline. The U.S. Census Bureau projects that 10 years from now, there will be about 100,000 fewer 14- to 17-year-olds in New England.

Jared Diamond, in his book *Collapse*, chillingly describes past societies that perished because they refused to recognize how their actions, so deeply rooted in their culture, were so self-destructive. Here in New England, the culture that allows small towns (especially college towns!) to stay small by prohibiting the construction of any reasonably priced housing, except for senior citizens, will mean a grim future for our economy and for higher education.

Not only will New England's colleges find it harder to recruit students, they will find it harder and more expensive to recruit workers. Going to a private four-year college in New England already costs 24 percent more than in the nation as a whole, and in-state yearly charges for public four-year colleges are at least 15 percent more. Rising labor costs will mean pricing our colleges out of

nors, legislators, college presidents and others to discuss quality of college curricula, teaching and assessment.

Tufts University President Jean Mayer assumes NEBHE chairmanship.



**1986** NEBHE begins publishing quarterly journal, titled *CONNECTION: NEW ENGLAND'S JOURNAL OF HIGHER EDUCATION AND ECONOMIC DEVELOPMENT*. In 2001, the journal would adopt its current name,

*CONNECTION: THE JOURNAL OF THE NEW ENGLAND BOARD OF HIGHER EDUCATION*.

Reagan defense buildup reaches peak.

Tuition and mandatory fees at New England's private four-year colleges average \$7,739, compared with \$5,793 nationally. Tuition and mandatory fees at the region's public four-year colleges average \$1,590, compared with \$1,137 nationally.

**1987** NEBHE asks leaders of business, government and education to peer into New England's future and identify issues that will be critical to the region's prosperity. The result is the *Future of New England Leadership Survey Report*.

NEBHE publishes *Economic Competitiveness and International Knowledge* and *The Impact of Globalization on Higher Education*, exploring links between U.S. competitiveness and international aspects of higher education.

A record 25 percent of college freshmen say they plan to pursue careers in business, according to the American Council on Education. By 1992, the number had dropped to 14 percent.

The stock market crashes.



reach for more and more students who can just go elsewhere for less.

What can be done? For starters, everyone who works for a college or university or cares about New England's future must get involved with their local government to stop permitting only age-restricted housing and start doing whatever it takes to get some affordable workforce housing. This may mean changing school funding formulas so the cost of education does not fall so heavily on small school districts.

But just as much as the region needs more housing, it also needs much better public schools. Whatever the region's colleges and universities are doing to help raise the quality of primary and secondary schools, it clearly hasn't been enough. One-quarter of New England's public high school students still don't graduate and of those that do, only about half go on to higher education.

Second, the region needs a large, well-funded and long-range marketing program to change the image of New England in the rest of the nation. We're dangerously close to becoming just a big theme park. As someone suggested at a recent meeting I attended in South Carolina: "New England's a fine place to vacation, but you wouldn't want to live there or send your kid to college there."

The most important part of any marketing program is the upfront research that will reveal, not only what we think of our region, but what people in the rest of the nation, particularly parents of college-age kids, think of New England. The research should include exit interviews with some of the young people who have chosen to leave the region.

Third, the historical ability of New England colleges and universities to counter the region's deteriorating demography by attracting talent from across the nation and around the world is seriously in question. This region's colleges are pricing themselves out of the

market for New England students who are on the fence about going to college at all. And they are discouraging students from elsewhere who may now find a better price-to-value relationship nearer to home. Colleges across New England need to rethink their value proposition. What exactly is the primary benefit of a New England higher education? And how should New England colleges market the unique benefits they offer?

New England is the smallest, oldest and nearly the slowest-growing region in the nation. But it also has the nation's highest level of educational attainment among adults age 25 and older and the nation's highest household income. It's time we used some of that money and expertise to craft a better future for ourselves than these ominous trends would suggest.

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**Peter Francese** is director of demographic forecasts for the New England Economic Partnership and founder of *American Demographics* magazine

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## New England's Going to Do It Again

JAMES T. BRETT

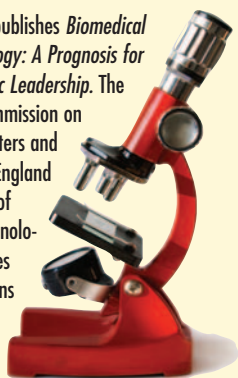
New England is a region at a turning point in its history—again. As we reinvent ourselves this time, the region faces some particular challenges.

A study conducted this year for The New England Council by the global management company A.T. Kearney points to some troubling trends: an aging workforce; outmigration of young, educated people; aging and insufficient infrastructure moving goods and people; and lack of aggressive marketing to attract businesses and skilled workers to the region. Added to these challenges are an overall high cost of doing business and high cost of living, including some of the fastest-rising housing prices of any region in the country.

It's not difficult to imagine why more affordable regions

### *A Half Century of New England Higher Education and Economic Development, continued*

**1988** NEBHE publishes *Biomedical Research and Technology: A Prognosis for International Economic Leadership*. The report of NEBHE's Commission on Academic Medical Centers and the Economy of New England explores the promise of New England's biotechnology industries and issues major recommendations to encourage biotech manufacturing in New England.



New England's regional unemployment rate dips to an average of 3.1 percent, while the U.S. rate averages 5.5 percent.

Three-term Massachusetts Gov. Michael Dukakis loses his bid for the presidency against the backdrop of a crashing economy and state fiscal crisis. Budget woes hit Beacon Hill first, but within two years, all six states are cutting programs, laying off workers and searching for new revenue.

The William T. Grant Foundation's publication of *The Forgotten Half* focuses attention on the inadequacy of school-to-work programs for non-college-bound students.

U.S. Sen. George Mitchell, a Democrat from Maine, becomes senate majority leader. Mitchell opts not to seek re-election in 1994.

Vermont Technical College begins experimental two-way interactive link between its Randolph campus and the North Country Union High School in Newport, a pioneering program in using telecommunications to connect colleges and high schools.

University of New Hampshire President Gordon A. Haaland assumes NEBHE chairmanship.

are now outpacing New England in job creation and doing a better job at attracting growth companies and people.

Despite these trends, New England remains a global leader on many fronts, particularly in the area of technological advancement. We are known as a world leader in health care, and thousands come to the region to take advantage of the best in higher education.

But the A.T. Kearney study and other published analyses point to weaknesses that threaten our leadership in these areas as well. New England cannot afford to be complacent. And it clearly is not a productive strategy to undernourish or underinvest in the critical resources of our economy, such as higher education.

The myriad reports that cite the forces working against New England's growth often return to education as a source of answers and strategy. Our lowest-in-the-nation public investment in higher education is an example of the type of irony that may ultimately undermine our efforts.

Even more than financial support, collaboration between higher education and the business community will play a critical role in the future success of the New England economy.

New England has stood at this crossroad many times before and successfully transformed its economy to keep it vibrant. From the early days of agriculture, we moved to excel in an industrialized society; dominance in shoes and textiles turned to pioneering in software and defense. Today, technology and life sciences lead the way. We may not know what the future holds, but we have a history of charting the right course for the future, and there is every reason to believe we will do it again.

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**James T. Brett** is president and CEO of The New England Council.

## The Human Development Gap

JAMES P. COMER, M.D.

The past half century has witnessed the greatest scientific and technological change in the history of the world. A significant consequence is that living wage employment, desirable family and community functioning, and societal well-being now require a very broad base of well-educated people. But while higher education has played a central role in promoting scientific and social progress, it also has helped create a gap between those who are developed well enough to function effectively and those who are not.

Academic learning and child development are inextricably linked. And good social, psycho-emotional and moral-ethical development is as important as brain development and physical, linguistic and cognitive-intellectual development. By focusing primarily on improving academic achievement gains rather than overall development, a human development gap has been created and is almost certain to widen.

Underdeveloped young people are less likely to perform well in school and later as family and community members and responsible citizens. They are more likely to display socially and financially high-cost problem behaviors—just at the time we face significant economic and social challenges from other nations.

There are more than 2 million American men in jail, contributing significantly to school, family and community problems. Mental and physical health problems, unemployment and welfare dependency, domestic violence, child abuse and neglect are all influenced by human underdevelopment. Our failure to prepare our young people for responsible civic participation is a major reason they don't vote or volunteer as adults.

It is irresponsible to argue that such development

**1989** The "miracle" is over. New England unemployment rate rises; personal income growth falls. Wang, Digital, Data General and Prime Computer announce major layoffs.

NEBHE issues *Equity and Pluralism: Full Participation of Blacks and Hispanics in New England Higher Education*. The benchmark report of NEBHE's Task Force on Black and Hispanic Student Enrollment and Retention in New England offers 20 major recommendations to ensure greater participation and success among blacks and Hispanics in New England higher education and the educated workforce.

Rhode Island Children's Crusade launched, guaranteeing full college scholarships to economically disadvantaged Ocean State students.

Through its Regional Project on the Global Economy and Higher Education in New England, NEBHE briefs state legislators in all six state capitals on the internationalization of higher education and the economy.

NEBHE issues *Law and the Information Society: Observations, Thoughts and Conclusions about Legal Education, Law Practice and the New England Economy*, the report of a NEBHE panel of distinguished lawyers, judges, law school deans and business leaders. The report finds that while lawyers have contributed to the region's economy, growth in the

legal profession has not worked to curb legal costs, reach more middle class and poor people or ensure professional competence.

Tuition surcharge on Regional Student Program is raised to 50 percent.

Number of New England high school graduates begins sharp decline.

Boston University wins approval to manage the Chelsea, Mass. public schools, becoming the first private institution to manage a public school system.

Massachusetts Institute of Technology becomes the first university ever to be granted more than 100 patents in one year.





should take place at home when there is research evidence that a school experience that addresses development can help. But higher education has not done nearly enough and is not doing nearly enough to prepare a pre-service and in-service administrator and teacher workforce with the knowledge, skills and incentives needed to create a school-based culture in which the full development of students can take place. Indeed, the neuroscience research base needed to guide change in teacher preparation is sparse and underutilized. And the policies and practices are not in place to enable even willing institutions to join development and pedagogy.

It is very unlikely that new educator programs now emerging outside traditional higher education can address the need. And it is the height of self-deception to believe that our country can remain competitive and reasonably well-functioning with a widening human development gap. Higher education must seriously address issues of childrearing and development if our country is to remain strong.

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**Dr. James Comer** is the Maurice Falk Professor of Child Psychiatry at the Yale University School of Medicine's Child Study Center and founder of the Comer School Development Program, which promotes the collaboration of parents, educators, and community to improve outcomes for children.

## A Future in Concrete?

SEYMOUR PAPERT

I accuse the system of Higher Education of failure to carry out due diligence in considering the opportunities for early learning created by digital technologies. While it is widely recognized that the baggage of knowledge and attitudes brought by students entering

universities is deeply affected by their digital experience, the Education Establishment has shown extraordinary passivity toward development of the experience.

How young people experience the digital world is shaped by the tools offered by the computer industry: office suites, search engines, games and chat rooms. School has been entirely reactive: "computer literacy" is defined as mastery of the proffered tools, "educational technology" is defined as "integrating" these tools into teaching practices. I find it quite extraordinary that schools have not taken advantage of the love affair between children and computers to give the science underlying these wonderful machines a significant place in the school curriculum. If this were successfully done, the young generation would have the chance to develop a love for science by seeing it used in an area that affects them. Indeed, they could use it themselves by engaging in intellectually deeper applications of the technology.

It is quite paradoxical that the standards for science education systematically exclude the sciences of computation, information and complexity (CIC) in favor of updated versions of the disciplines established in earlier centuries. This is made doubly paradoxical by the fact that the CIC disciplines have spawned new ways of doing science that could empower young learners as they empower professional scientists. For example: many cutting-edge scientific problems that were too complex for equation-based theories succumb to programming-based modeling; in the same way, children who have learned to program are able to think creatively about problems too complex for the old-fashioned mathematics that is being cast in the concrete of school standards.

My accusation is less that schools mindlessly follow the curriculum than that the intellectual world is

### *A Half Century of New England Higher Education and Economic Development, continued*

University of Maine at Augusta begins offering courses at remote sites via fiber optic and microwave, beginning one of the nation's leading educational telecommunications programs.

Median salary for U.S. college presidents is \$126,027.

**1990** National Science Foundation awards multimillion-dollar National High Magnetic Field Laboratory to Florida State University over the Massachusetts Institute of Technology, symbolizing for many the erosion of New England's longstanding research edge.

The Baby Bust reaches New England campuses; NEBHE's 31st annual vacancy survey reveals more

than 19,000 fall-term openings for qualified freshmen as of the traditional May 1 deadline.

National Center on Education and the Economy publishes *America's Choice: High Skills or Low Wages?*, including benchmark recommendations to increase workforce productivity.

Congress passes the Student Right-to-Know and Campus Security Act, requiring colleges and universities to provide information on graduation rates of student-athletes and crime statistics.

University of Maine System Chancellor Robert L. Woodbury assumes NEBHE chairmanship.

**1991** NEBHE publishes special issue of *CONNECTION*, titled *Thinking Environment*, advancing regional assessment of environmental education and technology in New England.

New England unemployment rate averages 8 percent, compared with national average of 6.7 percent.

A string of more than 30 Massachusetts bank failures over two years culminates with the collapse of the Bank of New England, the nation's fourth largest bank failure at the time. The bank's assets are acquired by Fleet/Norstar Financial Group of Rhode Island, which would also take over Bank of Boston before being acquired by Charlotte N.C.-based Bank of America.

passively unconcerned about whether there might be something better.

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**Seymour Papert** is cofounder of the MIT Artificial Intelligence Lab and founder of the Maine-based Learning Barn. For more along these lines, see: [www.learningbarn.org](http://www.learningbarn.org)

## Teaching Expert Thinking

CHRIS DEDE

The new baseline for entry into the 21st century workforce is no longer a high school diploma, but rather, an associate degree—and a decade from now, an even greater level of education will probably be required.

In their 2004 book titled *The New Division of Labor*, economists Frank Levy of MIT and Richard Murnane of Harvard document how: “Declining portions of the labor force are engaged in jobs that consist primarily of routine cognitive work and routine manual labor—the types of tasks that are easiest to program computers to do. Growing proportions of the nation’s labor force are engaged in jobs that emphasize expert thinking or complex communication—tasks that computers cannot do.”

Levy and Murnane go on to explain that “expert thinking” involves “effective pattern matching based on detailed knowledge, and metacognition, the set of skills used by the stumped expert to decide when to give up on one strategy, and what to try next.”

“Complex communication,” the two economists note, requires “the exchange of vast amounts of verbal and nonverbal information. The information flow is constantly adjusted as the communication evolves unpredictably.”

Expert thinking and complex communication require sophisticated skills and knowledge typically infused by

college education rather than secondary schooling. Higher education must rise to this challenge, rethinking both its mission and its relationships with economic development groups and workforce training organizations.

This transformation will require a few immediate shifts in standard operating practices, including:

- Shifting the emphasis in general education coursework from providing basic knowledge about the subject area to instead modeling and experiencing the types of expert thinking and complex communication in which that field’s practitioners engage. For example, courses in history would have as their primary educational objective enhancing students’ skills in interpretive reasoning given incomplete, inconsistent and biased data.
- Reconfiguring the structure of public education to K-14 as the minimum educational attainment guaranteed through universal access. This change would require much closer alignment between higher education and secondary schooling, with massive shifts in both types of organizations’ curriculum, pedagogy, assessments, organizational structure, staffing and incentive systems.
- Investing in the sophisticated information and communications technology infrastructure necessary to foster educational, workforce and economic development through lifelong activities on and off campus, in parallel with forward-thinking nations’ strategies for success in the global, knowledge-based marketplace.

A lesser response would be like shifting deck chairs on the Titanic.

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**Chris Dede** is the Wirth Professor in Learning Technologies at Harvard University.

Credit: Gary Kieffer/ZUMA Press.



Military operations end at Pease Air Force Base.

Security concerns stemming from Persian Gulf War result in cancellation of various study-abroad programs.

Massachusetts and West Virginia make unsuccessful bids to lure students from heavily damaged Kuwait University.

Tuition and mandatory fees at New England’s private four-year colleges average \$13,487, compared with

\$10,017 nationally. Tuition and mandatory fees at the region’s public four-year colleges average \$3,439, compared with \$2,137 nationally.

**1992** Congress passes Higher Education Amendments, tightening rules for institutions participating in federal aid programs and establishing controversial State Postsecondary Review Entities to set statewide standards and deal with fraud and abuse.

Defense “drawdown” rattles defense-dependent local economies from Groton, Conn., to Bath, Maine. Connecticut sees value of defense contracts shrink from \$5 billion to \$3.1 billion in one year.

New England public colleges and universities stung by budget cuts. The state higher education appropriation in Massachusetts is down more than 30 percent from 1988.

New England is mired in recession. *Newsweek* tells readers: “The trick this year is finding those regions and occupations displaying a bit more strength than others. The Southwest and Mountain states, for instance, are growing modestly. One quick bit of advice: forget the Northeast; it’s a disaster.”

Franklin Pierce College President and former New Hampshire Gov. Walter Peterson assumes NEBHE chairmanship.



## Affordability and Opportunity

SANDY BAUM

New England's future well-being depends upon continually expanding educational opportunities. But college tuition levels in New England are high. On average, the published price of a four-year college education in the region is about 30 percent higher than the average for the nation as a whole. Though incomes are also higher than average in four of the six New England states, the \$7,000 or so price of a year at a typical four-year public institution in New England is out of reach for a significant portion of the population. It may be somewhat encouraging to note that college prices have risen more rapidly elsewhere in the country over the past decade. But the access problem will remain very real no matter what happens to tuition and fees, as living costs and foregone earnings alone provide insurmountable barriers to college for many.

How can New England ensure that it not only preserves its standing as a well-educated region, but also increases the proportion of 9th graders who earn college degrees in a timely manner—a share that is above the national average, but still below 30 percent in every New England state?

Higher education is obviously not the only answer to this problem, given the difficulties at earlier stages of the education pipeline. But it is an indispensable piece of the puzzle.

Access and affordability depend more on the price students actually pay for college than on the published tuition levels. Considerable effort must be made to guarantee that whatever levels of tuition prevail, all low-income students who can benefit from higher education have access to sufficient grant funds to enroll and succeed in college. New England has generally succeeded in directing grant aid to students based on

their financial need, despite a nationwide shift toward non-need-based “merit aid.”

It would be a mistake for New England to follow the example of those states that are attempting to use their funds to induce students who might otherwise go to college out of state to study locally. Both equitable and efficient use of public funds require using our dollars to change the behavior of students who would not otherwise be able to afford college. Attracting college *graduates* with loan forgiveness or other incentives would be a better approach to any outmigration problem than would luring college *students* with merit aid.

Providing realistic opportunities for all young people, as well as for older individuals who need additional education and training to succeed in the workforce, must be a priority for all the New England states. We should develop programs that provide a clear and reliable commitment to children from low- and moderate-income families that the funds they need to finance a college education will be available if they meet the academic requirements.

An innovative approach might involve annual contributions to college savings accounts for children from low-income families. A program that provides these young people with their own funds years before they finish high school would address their financial problems and academic preparation problems simultaneously. This type of policy would go a long way toward ensuring that New England weathers future economic slowdowns without sacrificing the educational opportunities that provide the foundation for a healthy economy over the long run. Any sense of complacency or loss of focus on these goals will cost the region dearly for years to come.

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**Sandy Baum** is a professor of economics at Skidmore College in New York and senior policy analyst at the College Board.

*A Half Century of New England Higher Education and Economic Development, continued*

**1993** NEBHE creates the New England Technical Education Partnership, bringing together educators and other professionals to improve New England's two-year technical education programs.

Congress passes Student Loan Reform Act, calling for “direct lending” from the U.S. Treasury through colleges to students, and National Service Trust Act, providing education grants in exchange for community service.

Total charges at Yale University pass the \$25,000 mark.

Wellesley College reports a 15 percent rise in freshman applications, attributed partly to the popularity

of activist First Lady Hillary Rodham Clinton, who graduated from the women's college in 1969.

**1994** NEBHE establishes Regional Commission on Telecommunications and Distance Learning to clarify

the challenges and opportunities the field presents to New England.

With support from the Pew Charitable Trusts, the Ford Foundation and others, NEBHE and two other regional education agencies—the Southern Regional Education Board and the Western Interstate Commission for Higher Education—launch “Compact for Faculty Diversity” program to increase the number of African-Americans, Hispanics and Native Americans who complete Ph.D.s and enter college teaching.



Credit: Bill Winer/PDI.

# A Plan for Higher Education Access

JOHN F. TIERNEY

A recent New England Council report emphasized a well-known fact: a strong public higher education system is critical to a state's economic viability. Businesses rely on public college and university graduates—almost 80 percent of whom remain in state—as the next generation of innovators and as a necessary highly qualified workforce.

The reauthorization of the federal Higher Education Act underway in Congress has provided a forum for debate of issues such as college access and affordability. An alternative supported by House Education Committee Democrats addresses college affordability and accessibility in several ways.

First, the plan would require states to restore funding for public higher education. A direct parallel exists between shrinking state support for public higher education and higher tuitions for students and their families. States should be obligated to maintain a reasonable contribution if they are to receive federal assistance in administering education programs.

All institutions—whether public or private—could also benefit from new incentives to keep costs down. The U.S. Department of Education would research successful cost containment strategies and share them broadly. Schools that keep costs within a higher education price index would receive bonus Pell Grant funds to award to eligible students, with special benefits when a commitment is made and kept to hold those rates down for the students' entire four-year stay.

Because more students are qualifying for college, and more families are financially eligible, the Pell Grant maximum would be doubled, helping lower- and middle-income families meet tuitions. For those who must borrow to meet obligations, cost-saving Direct

Loans would be encouraged, and when consolidating loans, students could choose between a low fixed or variable interest rate with a low cap, saving borrowers thousands of dollars.

Finally, our initiative would simplify the financial aid application process by establishing a procedure to give students early estimates of federal student aid eligibility so they and their families can plan ahead.

A strong federal-state partnership to provide quality, affordable higher education is critical, and businesses and families must insist that we adequately invest in our future. Such opportunity must be part of New England's, and America's, competitive strategy.

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***U.S. Rep. John F. Tierney** (D-Mass.) is the only New England member on the House Committee on Education and the Workforce.*

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## Diversifying Academic Knowledge

ESTHER KINGSTON-MANN

In a world of media spin, where each talking head lays claim to a different and contradictory set of "facts," the good news is that today's academic scholarship also produces many facts that are not contradictory and provide opportunities for understanding and competence that were nonexistent 20 years ago. Many of these new resources were the creations of diversity research—scholarly investigations that place the heterogeneity of human life and experience at center stage.

In the 1960s, before the explosion of research in all fields that critiqued, challenged and transformed what was previously viewed as the best and soundest scholarship, the university's traditional academic course offerings were prone to highlight the universal achievements of a Western European, male middle class. Although this group remains eminently worthy of

Clinton administration unveils plans for National Information Infrastructure, and plans to relax 60-year old federal communications regulations.

A consortium of Vermont's six public higher education institutions agree to manage all employee education and training for IBM Burlington, Vermont's largest private employer.

Connecticut Higher Education Commissioner Andrew G. De Rocco assumes NEBHE chairmanship.

**1995** NEBHE launches New England Environmental Education Program, including an internship program that would provide more than 200 New England students from 59 colleges and universities with jobs, academic counseling, professional development and leadership training through real-world environmental work experiences with New England corporations, state government agencies and nonprofit organizations.

NEBHE receives federal grant to help schools and colleges introduce fiber optics technology into curriculum.

Connecticut adopts 10-year, \$1 billion UConn 2000 initiative to modernize Storrs campus.

**1996** U.S. 5th Circuit Court ruling bars use of race in college admissions in Texas, Louisiana and Mississippi. California voters approve ballot question banning race in admissions at public colleges.

New England's total college enrollment dips to 795,000, down from a peak of 827,000 in 1992.

Former Rhode Island Higher Education Commissioner Eleanor M. McMahon assumes NEBHE chairmanship.

**1997** Federal Taxpayer Relief Act creates Hope Scholarship, Lifelong Learning Tax Credit and other tax benefits for college.





careful study, it represents only a part of the human story. And as my philosopher-colleagues like to remind me, *the part is not the same as the whole*. So: If we believe that academic knowledge is valuable because it fosters, however imperfectly, a better understanding of reality, and more competent engagement with the world, then it becomes necessary to consider not only this much-studied group, but also the majorities that the Uruguayan essayist Eduardo Galeano once described as the hundreds of millions who have “been standing in line for centuries to get into history.”

*Two examples:* 1) In the field of medicine, an exclusive focus on males as the appropriate research subjects produced cardiovascular research that prevented doctors from recognizing the significant differences between men and women both in symptoms and response to treatment of heart attack (or from noticing that cardiac death rates among black women are two-thirds higher than for white women). Scholars who raised questions about gender and race opened the possibility for better medical treatment for everyone. Unfortunately, much of the research on diagnosis and treatment in the last 20 years continues either to exclude women entirely or include only limited numbers of women. 2) In the study of adolescents and families, Western mainstream scholarship traditionally focused on the universality of “adolescent stress,” caused by inevitable tensions between family demands and the peer pressures that foster disregard for them. However, cross-cultural research indicates that in many contexts, adolescence instead marks the transition to more adult roles within the family and community (with peer pressure a far less influential factor). Cross-cultural investigations have increased from 5 percent of the total in the 1950s to 14 percent in 2005. It is hard to imagine

that this research will fail to enhance the competence of scholars, policymakers and practitioners of family and individual therapy who work with diverse populations.

In these fields and in many others, advances in scholarship are opening new possibilities for productive encounters with a complex and heterogeneous world. Take a moment to imagine this message as a clear and unapologetic statement about the aims and goals of higher education. There are no guarantees of course, but educators should nevertheless take heart. A widespread and massive engagement with academic knowledge might in fact produce some welcome surprises.

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*Esther Kingston-Mann is a professor of history/American studies at the University of Massachusetts Boston, where she received the 2005 Chancellor's Award for Distinguished Scholarship.*

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## Close the Latino Education Gap

MARILDA L. GANDARA

Thoughtful people across the political spectrum debate the merits of educational programs for African-Americans, Latinos and other minority groups. Differences of opinion around affirmative action, Head Start, the No Child Left Behind Act and the education of immigrant children lead to intense arguments. Yet I rarely hear discussion about how insufficient financial support for college costs impacts this population.

I came to this country in 1960. In eight years, I was able to attend a private college with only a partial scholarship, minimal debt and the hard work of my parents. Later, my law school tuition was \$1,500 a year. While it was not easy it, was doable; all we had to do was dream big and work hard. I wonder if that is true today.

### *A Half Century of New England Higher Education and Economic Development, continued*

Annual survey of priorities by the Association of Governing Boards of Universities and Colleges finds nation's higher education leaders focused on congressional proposals to expand the federal role in making college more affordable as well as looming changes in health-care and copyright laws.

NEBHE launches AQUA initiative providing aquaculture-related curriculum and professional development for schools and colleges.

**1998**

Congressional reauthorization of Higher Education Act creates GEAR UP programs to encourage college access while eliminating student aid eligibility for students with drug convictions.

NEBHE launches New England Public Policy Collaborative to provide a regional framework for the region's policy research expertise and enhance access to policy research. Funded by the AT&T Foundation, the collaborative hosts two regional “New England Agenda” conferences and introduces a NEBHE web page linking 300 public policy research centers and institutes.

Nellie Mae Education Foundation created as New England's largest philanthropy devoted to educational achievement and equity for underserved populations.

University of Massachusetts President-emeritus David C. Knapp assumes NEBHE chairmanship.

**1999**

NEBHE and the John W. McCormack Institute of Public Affairs at the University of Massachusetts-Boston conduct *The Future of New England* survey asking 1,000 New England opinion leaders and 1,000 New England households their views on pressing public policy issues, regional economic prospects and opportunities for interstate action in New England.

NEBHE sponsors mock “Race for Governor of the State of New England,” in which six New England political leaders debate regionwide campaign “platforms.” The “candidates” include: then-Connecticut state Senate President Kevin Sullivan; then-Maine



I recently talked to a young Latina who reminds me of myself at age 19. She came to this country at age 3 and completed high school with honors in a middle-class suburban town. She then enrolled in a nursing program at a New England university where she attained a 3.5 grade point average in her first year. This summer, after receiving a letter notifying her of another tuition increase, she calculated that her debt at graduation would be more than \$150,000. How could she hope to pay that off? Feeling a sense of defeat, she decided to quit college and go to work instead.

One-third of Americans finish college, but only one-third of Latinos finish high school. Given rapidly changing demographics, the nation's future in a competitive global economy depends to a considerable degree on how successful we are at closing that education gap.

Transitional action to even out the playing field is in everyone's best interest. We need to continue affirmative action and effective programs like Head Start. Working with parents of students in middle school or younger, we need to experiment with ways to orient the entire family toward the value of higher education and the long-term planning needed to successfully navigate a college education. We also need to explore curricular changes such as offering an organized academic program in small business development, which could be particularly attractive to a population that is very entrepreneurial.

Latinos want the same thing as everyone else—a reasonable shot at the American Dream. If that dream is only accessible to the wealthy, we will not have to worry about immigration for long. If there is no credible dream to strive for, it is not only the fate of Latino children we will need to consider.

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**Marilda L. Gandara** is president of the Aetna Foundation.

## Attracting Students to Science

GEORGE M. LANGFORD

Undergraduate science and engineering (S&E) majors are the bright minds that become the scientists and engineers of tomorrow. Technically trained students graduate with high employment potential and usually land jobs with high salaries. One might ask then, why do U.S. undergraduates pursue S&E majors at lower rates than their counterparts in other countries?

The United States ranks 17th globally in the proportion of its college-age population that earns S&E degrees, down from third several decades ago, according to the Council on Competitiveness. China, because of its large population, graduates three times as many engineers from its colleges as the United States does. Many other nations today boast a higher percentage of 24-year-olds with S&E degrees than the United States.

As the number of U.S. students studying science and engineering in graduate schools has dropped, schools and employers have compensated by enrolling and employing more students and professionals from other countries.

In 2003, foreign students earned 38 percent of science doctorates awarded by U.S. universities, and foreign professionals occupied 22 percent of all U.S. science and engineering jobs, up from 14 percent just 10 years before, according to National Science Board data.

But we cannot tolerate a continually low participation rate of U.S. students in science and engineering fields and growing reliance on foreign S&E talent.

Over-reliance on foreign-born scientists and engineers discourages U.S. students from entering these fields for two important reasons. First, an abundance of international scientists and engineers eager to work in the United States produces downward pressure on U.S. wages. Second, it takes the pressure off our

state Senate Majority Leader Chellie Pingree; former Massachusetts state senator and gubernatorial candidate Patricia McGovern; former New Hampshire state representative and congressional and gubernatorial candidate Deborah "Arnie" Arnesen; former Rhode Island Gov. Bruce Sundlun; and then-Vermont state Treasurer James Douglas, who would later become Vermont's governor.

Castle College of Windham, N.H. ceases operations, signaling consolidation in the New England higher education market. Within a year, Bradford and Aquinas college will follow suit. The Art Institute of Boston will merge with the larger Lesley University, and Maine's Casco Bay College will merge with Andover College.

**2000** New England sustains lowest-ever unemployment rate of 2.7 percent. Region's technology-intensive companies cannot fill jobs as a skilled labor shortage dogs the region.

Vermont state Sen. Nancy I. Chard assumes NEBHE chairmanship.

**2001** September 11 terrorist attacks prompt restrictions on student visa policies and usher in an era of reduced foreign enrollments, increased campus security and constraints on freedom of speech.



Credit: Andrea Booher/FEMA News Photo.

New England bleeds 85,000 jobs over the course of the year, many in technology industries.

Former U.S. Rep. Robert A. Weygand (D-R.I.) becomes NEBHE president and CEO.



schools and colleges to strengthen programs to attract and train students in S&E disciplines.

Reversing this pattern will be challenging. For one thing, U.S. students have a broad range of attractive career options from which to choose. In addition, because the American educational system is controlled by state and local school districts and autonomous higher education institutions, generating change on a national scale is difficult.

The good news is that a large number of U.S. domestic students begin with an interest in science. About 30 percent of students entering U.S. colleges intend to major in S&E fields. This proportion has remained fairly constant over the past 20 years. However, a considerable gap exists between freshman intentions and successful degree completion. Undergraduate S&E programs report the lowest retention rate among all academic disciplines. Fewer than half of the students who began S&E programs in 1990 completed S&E degrees in five years, according to one study published in 1996 by the National Center for Education Statistics.

Rather than assume that the foreign supply of talent will always be available to fuel our technology-driven economy, we need to work harder to attract and train those bright kids who become tomorrow's scientists and engineers. One way to start is to implement the recommendations of the 2003 National Science Board report titled *The Science and Engineering Workforce—Realizing America's Potential*, which called on the federal government to take primary responsibility in meeting long-term needs for science and engineering skills in the U.S. workforce. Specifically, the report called on the federal government to:

- Direct substantial new support to students and institutions to improve success in S&E study by American undergraduates from all demographic groups.

- Provide scholarships and other forms of financial assistance for full-time enrollment in S&E fields.
- Expand university faculty and teaching labs for S&E education in areas of national need.
- Increase student transfers from community colleges to four-year S&E programs.
- Expand recruitment of underrepresented minorities and women in S&E.

We face a long-term challenge to sustain the U.S. global advantage in science and technology by fielding the world's best S&E workforce. We should not allow the strength and vitality of the nation's scientific and technology enterprise to slip away.

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**George M. Langford** is dean of the College of Natural Sciences and Mathematics at the University of Massachusetts Amherst.

## A Regional Resource for R&D

ANDREW G. DE ROCCO

For a decade or more, a shifting pattern of postgraduate study has been taking place. Not only has a greater proportion of degrees in the sciences been awarded to foreign nationals, but their subsequent opportunities abroad have grown, loosening our hold on their imaginative exploration of the unknown.

In addition, as both China and India, among others, plan for increased educational opportunities locally, the longstanding appeal we have held for able students may well shrink. Together with a modest domestic enrollment in these areas of study, one is given to wonder what impact this diminishing cadre will have on what has been characterized as our "creative economy." If we cannot depend on past patterns of enrollment, can we establish new ones?

*A Half Century of New England Higher Education and Economic Development, continued*

**2002** NEBHE initiates series of three conferences addressing key issues and challenges in workforce development. A resulting policy report, titled *Building Human Capital: A New England Strategy*, recommends steps to improve science and math teaching in New England schools, expand adult literacy programs and reform community colleges.

University of New Hampshire awarded National Endowment for the Humanities grant to host Center for New England Culture.

Middlesex Community College President Carole A. Cowan assumes NEBHE chairmanship.

**2003** NEBHE launches New England Higher Education Excellence Awards program to honor New England individuals and organizations who show exceptional leadership in behalf of higher education, public policy or the advancement of educational opportunity. First-year winners include: U.S. Sen. Edward M. Kennedy (D-Mass.); Dr. Marja Hurley, a professor at the University of Connecticut School of Medicine, the late Eleanor M. McMahon, who served as Rhode Island higher education commissioner from 1982 to 1989, and the Massachusetts Institute of Technology.

NEBHE launches Project PHOTON2, an initiative funded by the National Science Foundation to give educators the knowledge and resources needed to implement and teach photonics technology at their institutions.

NEBHE cosponsors Portland, Maine, conference, on reauthorization of the Higher Education Act, in which New England members of congress and education leaders warn of congressional proposals to deeply involve the federal government in higher education pricing and policies.



The colleges and universities of New England have been significant contributors to the nation's "intellectual capital" and the resulting "spinoffs" have boosted the economy. We might ask: Can NEBHE play a useful role in advancing the strength of our regional potential for study, discovery and utilization? And if so, how?

The growing vitality of our publicly supported universities suggests a possibility. Can NEBHE help to broker additional research and study opportunities across the public-independent divide? Our independent colleges have an enviable track record in fostering the sciences, and a few offer an undergraduate degree in engineering. Are there as yet underdeveloped possibilities for cross-enrollment and research internships for students? Research faculty are alert to the advantages of collaboration. Can NEBHE help foster a greater conjunction between our research centers, public and private?

While these suggestions raise questions of asset allocation, organization and management and of contractual obligations, all of which will require a sensible realization of the benefits to be enjoyed, none need be a barrier to a freer association of talent and interest.

If we think and act regionally, setting aside historical differences, it may be possible not simply to maintain our distinction but to hone it to an even finer edge.

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**Andrew G. De Rocco** is the former Connecticut commissioner of higher education. He served as NEBHE chair from 1994 To 1996.

## A Tall Order for New England

ROBERT E. MILLER

A half century ago, six New England governors established one of the nation's most successful agencies for interstate cooperation. The New England Board

of Higher Education has expanded educational opportunity for thousands of students through its Regional Student Program, saving families millions of tuition dollars. State governments have saved untold millions by not having to replicate costly programs that exist at out-of-state institutions.

NEBHE's studies, conferences and publications focused on the higher education "industry" have heightened awareness on the part of policymakers of the importance of sustaining the region's many colleges and universities and promoting their well-being as a vital part of the "creative economy."

As we celebrate NEBHE's past achievements, it is important to look ahead and envision other ways NEBHE may fulfill its mission. Today, we have technology not imagined in 1955 that opens enormous possibilities for sharing resources not only among public institutions, but also between the public and private sectors.

Competition can be replaced by collaboration. But this will require imaginative leadership. It will call for an exchange of ideas by college trustees, administrators, faculty and staff. NEBHE can play an extremely valuable role as facilitator, helping to develop the most complete, comprehensive and efficient education consortium in the United States. A tall order to be sure, but one that is attainable given New England's tradition of innovation and NEBHE's record of service to the higher education community.

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**Robert E. Miller** is the former president of Quinebaug Valley Community College. He served as NEBHE chair from 1981 to 1983.



**2004** U.S. Supreme Court upholds affirmative action in cases involving the University of Michigan. The court's rulings reaffirm that racial quotas are unconstitutional, but allow colleges to continue taking race into account in other ways in their admissions policies.

The court struck down the specific method used by the university to achieve diversity in undergraduate admissions by automatically awarding points to every under-represented minority applicant solely because of race.

**2004** David M. Bartley, retired president of Holyoke Community College and former Massachusetts House speaker, becomes NEBHE interim president and CEO, succeeding Weygand, who becomes vice president for administration and finance at the University of Rhode Island, his alma mater.

NEBHE sponsors conferences in Woodstock, Vt., focusing on the future of e-learning in New England and beyond. The conference features keynote addresses by Jack Wilson, president of the University of Massachusetts system, and Laura Palmer Noone, president of the University of Phoenix.

NEBHE is awarded a one-year, \$200,000 grant by the U.S. Department of Health and Human Services to study the feasibility of creating a Multi-Tribal College in New England.

New Hampshire Senator Lou D'Allesandro assumes NEBHE chairmanship.

**2005** Evan S. Dobbelle, former president of Middlesex Community College of Massachusetts, the City College of San Francisco, Trinity College and the University of Hawaii, and former two-term mayor of Pittsfield, Mass., becomes NEBHE president and CEO.